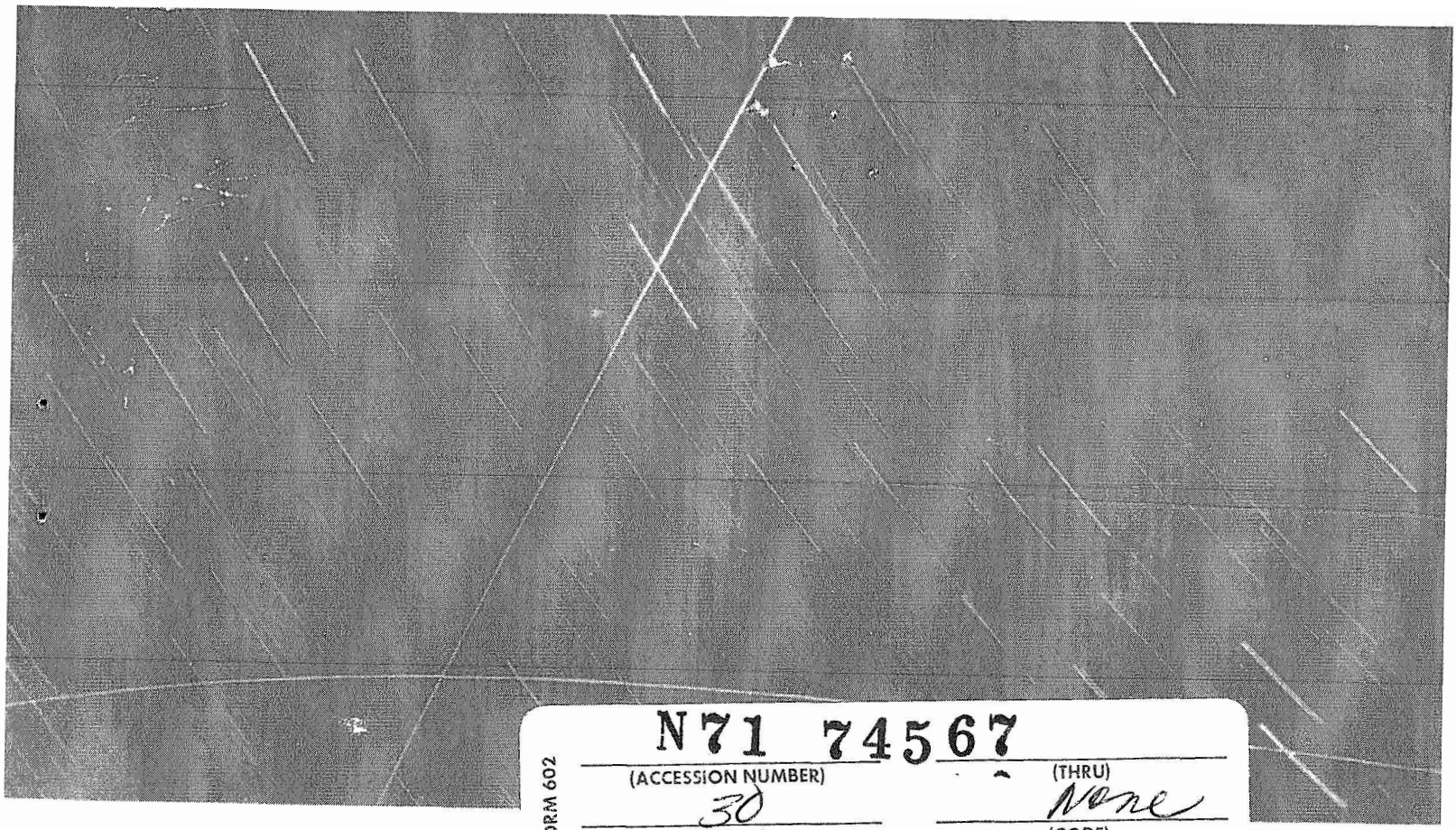

DATA CATALOG

NSSDC 69-17

SATELLITE EXPERIMENTS

OCTOBER 1969

SUPPLEMENT TO NSSDC 69-01

NATIONAL SPACE SCIENCE DATA CENTER

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION • GODDARD SPACE FLIGHT CENTER, GREENBELT, MD.

NATIONAL SPACE SCIENCE DATA CENTER

SUPPLEMENT TO

DATA CATALOG
OF
SATELLITE EXPERIMENTS
(NSSDC 69-01)

NSSDC 69-17

October 1969

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

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INTRODUCTION

PURPOSE

The purpose of the *Data Catalog of Satellite Experiments* is to announce the availability of experimental space science data, to describe these data, and to inform potential users of the services provided by the National Space Science Data Center (NSSDC).

Previously published semiannually, the complete cumulative *Catalog* will now be published every 2 years. In the interim, NSSDC will issue periodic supplements to the *Catalog.* This will serve two purposes: the large number of catalog entries will not have to be repeated every 6 months, and it will provide a systematic method of announcing the availability of data when processing is complete. The supplements will contain descriptions of data which have not previously been announced as available. NSSDC is currently investigating the feasibility of a Selective Dissemination of Information (SDI) system. The SDI system would enable the Data Center to notify interested individuals of data sets in a particular scientific discipline as soon as they become available to NSSDC for distribution.

DATA DESCRIPTION

This *Supplement* contains descriptions of experimental data that have become available since January 1969. The entries are arranged according to satellite launch date within major discipline categories: Fields and Particles; Interplanetary Dust Particles, Lunar and Planetary Studies; and Solar Physics and Astrophysics. The *Supplement* also contains a brief general index and investigator index keyed to the new material. Orbital parameters are given for each experiment description and are for the initial orbit unless otherwise stated.

A list of data which NSSDC has received and is currently in processing begins on page 17. If a user requires data from one of the listed experiments, he may inquire about the status of availability.

Contrary to the last edition of the *Catalog,* the *Supplement* does not contain listings of rocket launches. The World Data Center A for Rockets and Satellites publishes reports summarizing all scientific rocket launchings. The subcenter is now located contiguous to NSSDC and maintains constant exchange of information. (The address is given on the following page.)

DATA AVAILABILITY AND COSTS

Data listed in the *Catalog* and *Supplement* are available for use in scientific investigations. Data can be provided in the forms listed under each experiment description. As resources permit, the Data Center can fill small requests for data without cost to users. Charges may be necessary, however, in which case the requester will receive notification of the cost before the request is filled.

ORDERING PROCEDURES

A user may obtain data in any of the following ways:

1. Letter request
2. Data Request Form (see page 27)
3. Telephone request
4. On-site request (see Facilities and Services Section)

Anyone who wishes to obtain data for a scientific study should specify the name and/or number of the satellite and the experiment, the NSSDC data set identification number, the form of data, and the timespan of

data requested. A user should also specify why the data are needed, the subject of his work, the name of the organization with which he is connected, and any Government contracts he may have for performing his study. To avoid delay, the requester should use the Data Request Form provided at the end of this document.

When a user requests data on magnetic tapes, he should provide additional information concerning his plans for using the data, e.g., what computers and operating systems will be used. In this context, the Data Center is compiling a library of routines which can unpack or transform the contents of many of the data sets into formats which are more appropriate for the user's computer. NSSDC will be happy to provide information concerning the services it can perform for any given data set.

When requesting data on magnetic tape, the user must specify whether he will:

1. Supply new tapes prior to the processing, or
2. Return the original NSSDC tapes after the data have been copied

LOCATION

NSSDC is located in Building 26 at the Goddard Space Flight Center in Greenbelt, Maryland. The Data Center's official address for requests is:

National Space Science Data Center
Code 601.4
Goddard Space Flight Center
Greenbelt, Maryland 20771

Phone: 301 982-6695

Users who reside outside the U.S. should direct requests for data held in NSSDC to the World Data Center A for Rockets and Satellites. Also, since WDC-A now maintains the listings of rocket experiments, all requests for rocket data should be directed to this institution:

World Data Center A for Rockets and Satellites
Code 601
Goddard Space Flight Center
Greenbelt, Maryland , U.S.A. 20771

Phone: 301 982-6695

FACILITIES AND SERVICES

The Data Center has data on file in the forms specified in each experiment description. Resident and visiting scientists are invited to study the data while visiting the Data Center. In addition to having reproduction capabilities, NSSDC provides facilities for on-site data use. The Data Center staff will assist users with individual data searches and with the use of equipment.

PARTICIPATION

The National Space Science Data Center invites members of the scientific community to contribute data from satellite experiments. NSSDC assigns a specialist in the appropriate scientific discipline for each experiment to arrange for data acquisition with the principal investigator and to help solve related problems. Acquired data

will be cataloged and made available to users according to established procedures. Scientists who have not been contacted by one of the subject specialists and who have analyzed or reduced data available for contribution are requested to contact NSSDC in order that transferral of the data may be arranged.

The Data Center is continually striving to increase the usefulness of the *Data Catalog* by improving the data descriptions and including all pertinent information. Scientists are invited to submit their comments or recommendations to NSSDC regarding the data available, the services provided, and the contents and format of the *Catalog*. The Data Center is attempting to distribute the *Catalog* to all interested scientific personnel. Recipients are urged to inform potential data users of its availability. Anyone wishing to receive a copy of this publication can have his name added to the distribution list by phone or letter request.

ABBREVIATIONS

Abbreviations used in the *Catalog Supplement* are listed below. Note that the same abbreviation is used for both the singular and plural.

A	– angstrom unit
AFCRL	– Air Force Cambridge Research Laboratories
APL	– Applied Physics Laboratory
ARC	– Ames Research Center
ASE	– American Science and Engineering, Inc.
BCD	– binary coded decimal
bpi	– bits per inch
BTL	– Bell Telephone Laboratories
CALB	– University of California, Berkeley
cc	– cubic centimeter
deg	– degree
E	– energy
emf	– electromotive force
ev	– electron volt
ft	– foot
Gev	– gigaelectron volt
GHz	– gigahertz
GM	– Geiger-Mueller
gm	– gram
GMT	– Greenwich mean time
GSFC	– Goddard Space Flight Center
Gv	– gigavolt, rigidity
hr	– hour
Hz	– hertz
IBM	– International Business Machines
ID	– identification
in.	– inch

JHU – Johns Hopkins University
JPL – Jet Propulsion Laboratory

kev – kiloelectron volt
kHz – kilohertz
km – kilometer

LARC – Langley Research Center
lb – pound

m – meter
Mev – million electron volts
MHz – megahertz
MICH – University of Michigan
min – minute
MINN – University of Minnesota
MIT – Massachusetts Institute of Technology
mm – millimeter
MSC – Manned Spacecraft Center

NASA – National Aeronautics and Space Administration
No. – number
NSSDC – National Space Science Data Center

OGO – Orbiting Geophysical Observatory
OSO – Orbiting Solar Observatory

RICE – Rice University
RSRS – Radio and Space Research Station

sec – second
SID – sudden ionospheric disturbance

TRW – TRW Inc.

U. – university
UCSD – University of California at San Diego
UIA – University of Iowa
UT – universal time

v – volt
vs – versus

Z – atomic number

γ – gamma (10^{-5} gauss)

μ – micron, micro

ARIEL 1 – 1962 OMICRON 1

Apogee	1214 km	Period	100.9 min
Perigee	390 km	Inclination	53.87°

Cosmic-Ray Detector Experiment – Imperial College, London

Investigators:
H. Elliot
J. J. Quenby
R. J. Hynds
A. C. Durney

Ariel 1 was designed to contribute to knowledge of the ionosphere and the complex sun-ionosphere relationships. The satellite was launched on April 26, 1962.

The cosmic-ray detector experiment was designed to study the primary cosmic-ray spectrum with $Z \geqslant 5$ and rigidities $2.5 \text{ Gv} < R < 16.0 \text{ Gv}$. The experiment used a Cerenkov counter and Geiger tube detector. The experiment performed normally from launch to May 18, 1962, when the satellite moved into 100% sunlight. This position as well as other complications caused the photomutiplier tube to suffer an irreversible drop in sensitivity. The photomultiplier tube was permanently disabled 3 days after the July 9, 1962, Starfish explosion, and data are available up to this date.

Data Set 62-015A-03A: The data are on one 7-track tape at 556 bpi in BCD format. There are 595 files of data in chronological order, each file representing data from one orbit. Troublesome points on the tape are noted. Data are available for about 50% of the total timespan of data, which runs from April 27, 1962, to July 12, 1962.

Data include:

1. Continuous relative time (sec)
2. Geiger tube detector rate
3. Cerenkov counter rate
4. Altitude (geodetic)
5. Geographic latitude and longitude

SATELLITE 1963 38C

Apogee	1140 km	Period	107.5 min
Perigee	1067 km	Inclination	89.91°

Charged Particle Experiment – Applied Physics Laboratory/Johns Hopkins University

Investigators:
C. O. Bostrom
D. J. Williams

Satellite 1963 38C, launched September 28, 1963, carried charged particle instrumentation which consisted of an array of solid-state detectors. Five detectors comprised an electron spectrometer sensitive to electrons with energies greater than 0.28 (two detectors), 1.2, 2.4, and 3.6 Mev. Each of two proton spectrometers utilized two detectors in various combinations, and measured protons in the energy ranges 1.2 to 2.2 Mev, 2.2 to 8.5 Mev, 8.5 to 25 Mev, and 25 to 100 Mev. Three omnidirectional detectors measured electrons of energies greater than 0.28, 0.41, and 1.8 Mev, and protons of energies greater than 2.2, 8.5, and 25 Mev.

As of August 1969, the particle detectors were still functioning normally except for one detector of the electron spectrometer ($E_e \geqslant 3.6$ Mev). This detector has been intermittent since December 1963 and has provided an insignificant quantity of useful data since that date.

Data Set 63-038C-01D: This data set provides the proton and electron count rates and their statistical uncertainties as generated by the experimenters from the original data tapes. The data currently on hand consist of 103 9-track, 800-bpi binary magnetic tapes made on an IBM 360. The data are ordered chronologically in segments corresponding to passes over receiving stations. A header record appears at the beginning of each pass and includes the station, the day and rise time, and the classical orbital elements.

Data are currently available from September 28, 1963, to March 4, 1967. Since the satellite and experiment remain operational as of August 1969, more recent data will be included in this data set as they become available.

The data include:

1. Time
2. Latitude
3. Longitude
4. Altitude
5. B and L
6. Count rate from each detector
7. Statistical uncertainty for each count rate

The analog commutator record appears periodically through each pass and includes fluxgate magnetometer data, attitude information, and detector temperatures.

Data Set 63-038C-01E: An index of the data contained in data set D is available and is designated 63-038C-01E. The index consists of one 9-track 800-bpi tape for each year of available data. The tapes are written in the IBM 360 binary mode.

Each data record contains:

1. Pass number
2. Start and stop times for the pass
3. Numbers of the original tapes from which the pass was taken
4. Number of the tape in data set D on which the pass appears
5. Receiving station code number

EXPLORER 28 – 1965 42A

Apogee	264,245 km	Period	142.64 hr
Perigee	195 km	Inclination	33.0°

Fluxgate Magnetometer Experiment – Goddard Space Flight Center

Investigators:
N. F. Ness
D. H. Fairfield

Explorer 28 (IMP 3) was launched on May 29, 1965. The satellite carried two uniaxial fluxgate magnetometers designed to delineate precisely the vector characteristics of the interplanetary magnetic field and the outer regions of the magnetospheric magnetic field. One of the magnetometers functioned properly, measuring fields of magnitude less than 40 gammas.

The spacecraft performance was normal from launch to April 1967, then intermittent until May 12, 1967, after which no further data were acquired.

Data Set 65-042A-02A: These data consist of 5.46-min averages of the magnetic field measurements. The data are on nine reels of 9-track, 800-bpi, binary, unblocked tapes written on an IBM 360.

The data cover the period from June 4, 1965, to May 11, 1967.

The data include:

1. Time
2. Cartesian and spherical polar representations of the averaged magnetic field measurements in solar ecliptic coordinates
3. Variances of the Cartesian components
4. Spacecraft radial distance

Data Set 65-042A-02B: This data set contains the 5.46-min averages of the magnetic field measurements on nine reels of 7-track, 556-bpi, BCD, blocked tapes written on the IBM 360. The tapes contain the same data as 65-042A-02A.

Data Set 65-042A-02C: This data set consists of three reels of 7-track, 800-bpi, binary, blocked tapes written on the IBM 7094.

The data include:

1. Time
2. Cartesian and spherical polar representations of the averaged magnetic field measurements in solar ecliptic coordinates
3. Variances of the Cartesian coordinates
4. Spacecraft radial distance
5. Spacecraft position in solar ecliptic and solar magnetospheric coordinates

Data Set 65-042A-02D: This data set consists of the 5.46-min averages of the magnetic field measurements. The data are on three reels of 7-track, 800-bpi, binary, blocked tapes made on an IBM 7094. The data set contains the same information as data sets 65-042A-02A and B. This data set, however, will probably be the most readily usable.

The time coverage runs from June 4, 1965, to May 11, 1967.

Data Sets 65-042A-02E through H: These data sets consist of 1-hr averages of data separated into interplanetary and magnetospheric parts. The data are available on both tapes and microfilm.

65-042A-02E: This data set consists of hourly averaged interplanetary data on two reels of 9-track, 800-bpi, BCD tape. The time coverage is from June 1, 1965, to January 29, 1967.

65-042A-02F: This data set contains the same data as data set E, but is in the form of tabular listings on microfilm.

65-042A-02G: This data set consists of hourly averaged magnetospheric data on one 9-track, 800-bpi, BCD tape. The time coverage is from May 29, 1965, to May 10, 1967.

65-042A-02H: The magnetospheric data are also on microfilm and constitute data set H.

INTERPLANETARY DUST PARTICLES, LUNAR AND PLANETARY STUDIES

EXPLORER 23 – 1964 74A

Apogee	980.3 km	Period	52 min
Perigee	468.3 km	Inclination	99.2°

Micrometeoroid Experiments

Explorer 23 was put into orbit on November 6, 1964. It was the third satellite in a series designed to make direct measurements of the meteoroid penetration hazard in near-earth space. Results obtained from Explorer 16, the second in the series, were used in the design of Explorer 23.

The purpose of the satellite was to determine a statistical sample of punctures in two thicknesses of test material and to collect data concerning the effects of the space environment on the operation of a capacitor-type meteoroid penetration detector as well as other penetration detectors.

Reference: O'Neal, R. L., "The Explorer XXIII Micrometeoroid Satellite," NASA TN D-4284, June 1968.

Pressurized Cell Experiment – Langley Research Center

Investigators:
C. A. Gurtler
G. W. Grew

The primary thin-metal puncture experiment consisted of 216 stainless steel pressure cells mounted in seven rows around the periphery of the spacecraft. Of the 210 active cells, 70 had 25-micron-thick test material, and 140 had 50-micron-thick material. When a cell was punctured, the gas leaked out, and the pressure loss actuated a switch which signaled the cell rupture.

Data Set 64-074A-01A: The data have been compiled in the reference (O'Neal). NSSDC can provide copies of the five sheets of tabulations upon request.

Data include:

1. Pass number
2. Date
3. Interrogation time
4. Time since last interrogation
5. Accumulated punctures for 25μ and 50μ cells

Impact Detection Experiment – Langley Research Center

Investigators:
D. G. Holden
A. G. Beswick

The meteoroid-impact-detection system was designed to measure a mass distribution of meteoroids in space. The system had three levels of sensitivity which were assumed to correspond to three levels of momentum.

The meteoroid-impact-detection system consisted of 24 triangular sounding boards with attached piezoelectric transducers. A meteoroid impacting on a sounding board caused an electrical signal to be produced from the transducer. The electrical signal was amplified, threshold detected, counted, and stored until read out by interrogation of the satellite telemeter.

The total exposed area of the 24 sounding boards was 1.44×10^{-1} m^2. The boards were constructed of 0.13-cm-thick 6061 aluminum alloy. A lead-zirconate-titanate piezoelectric transducer element was mounted on the underside and in the center of the sounding board.

Data Set 64-074A-02A: Graphs showing the daily impact accumulation for the high- and medium-sensitivity levels are available at NSSDC. They also appear on pages 54-57 in the reference.

Data include:

1. Day of year
2. Number of impacts per day

APOLLO 8 – 1968 118A

Lunar Photography – Manned Spacecraft Center

Source:
Mapping Sciences Laboratory

Approximately 800 photographs were taken of the lunar surface by Apollo 8. Apollo 8 was equipped with photographic equipment and materials to (1) obtain vertical and oblique overlapping photographs of the lunar farside on at least two orbits, (2) photograph "targets of opportunity" as time and circumstances permitted, and (3) record operational activities and obtain documentation for subsequent crew training purposes.

Camera equipment carried aboard Apollo 8 consisted of two 70-mm Hasselblad electric cameras with two 80-mm focal length lenses, a 250-mm telephoto lens, and associated equipment (filters, ringsight, spotmeter, and an intervalometer for stereo strip photography). For sequence photography, a 16-mm Mauer data acquisition camera with variable frame speed selection was used. Accessories for the sequence camera included: 200-, 75-, 18-, and 5-mm focal length lenses, a right-angle mirror, and a boresight bracket.

Although the Apollo 8 coverage included photographs of the earth, only the lunar photographs are available at NSSDC.* To portray the Apollo 8 coverage, an *Apollo 8 Lunar Photography 70-mm Frame Index* has been prepared by the Mapping Sciences Laboratory, Manned Spacecraft Center. This index plus mercator index maps of the photo coverage published by the Aeronautical Chart and Information Center will be provided to persons interested in obtaining photographs. The index maps show the locations of all the sites photographed with respect to the lunar surface and should be useful in selecting frames of primary interest.

A *Data Announcement Bulletin* (NSSDC 69-06) presenting photographic coverage and format of available data may also be obtained from NSSDC.

*Inquiries or requests regarding the pictures of earth taken from Apollo 8 should be addressed to: Technology Applications Center, University of New Mexico, Albuquerque, New Mexico 87106 U.S.A.

SOLAR PHYSICS AND ASTROPHYSICS

INJUN 3 – 1962 BETA TAU 2

Apogee	2800 km	Period	116.3 min
Perigee	229 km	Inclination	70.4°

Proton-Electron Detectors Experiment – University of Iowa

Investigators:
J. A. Van Allen
L. A. Frank

The Injun 3 proton-electron detectors were designed to observe both trapped and precipitating particles and solar X rays. The geomagnetically oriented spacecraft was launched on December 13, 1962, into an elliptical polar orbit.

Injun 3 carried five Geiger tubes which detected energetic particles (electrons $\geqslant$ 40 kev, protons $\geqslant$ 0.5 Mev), and solar X rays from 2 to 12 A. Three Anton type 213 tubes were oriented at angles of 90°, 130° and 180° to the geomagnetic field lines. An additional type 213 detector, shielded to respond to electrons $\geqslant$ 230 kev and protons $\geqslant$ 40 Mev, was oriented at 90° with respect to the geomagnetic field. An omnidirectional type 302 Geiger tube responded to electrons $\geqslant$1.5 Mev and protons $\geqslant$20 Mev.

Data Set 62-067B-01A: The data set presents the final catalog of Injun 3 solar X-ray observations. The data are complete and in the form of a list of counting rates due to X rays. The list appears in a *Data Users' Note* (NSSDC 69-11) which is available upon request. The observations cover the period from December 20, 1962, through October 13, 1963.

Data include:

1. Date
2. Time of observation (UT)
3. Corrected counting rate
4. Detector making observation

OGO 1 – 1964 54A

Apogee	149,391 km	Period	63.9 hr
Perigee	282 km	Inclination	31.16°

Ionization Chamber Experiment – University of Minnesota

Investigator:
J. R. Winckler

OGO 1, launched September 5, 1964, carried an ionization chamber designed to measure the ionization due to primary cosmic rays in free space with an accuracy of about 1%. A second objective was to make measurements in the earth's radiation belts and the transition region.

Through June 1969, the OGO 1 experiment operation continued nominally although data acquisition was limited to roughly 10 percent of the orbital path.

The instrument was sensitive to electrons greater than 0.16 Mev and protons greater than 12 Mev. The chamber also responded to nonpenetrating electrons ($E < 0.6$ Mev) through the bremsstrahlung they produced in the chamber wall and to X rays having energies > 10 kev. The response to 40-kev electrons (through bremsstrahlung) was about 10^{-7} times the response for electrons greater than 0.6 Mev.

Data Set 64-054A-20C: The data consist of an atlas of 10-50 kev solar X-ray events as supplied by the experimenter. The analyzed data are in the form of plots on one roll of 35-mm film. The atlas covers the period September 5, 1964, to December 31, 1967.

The data are presented as plots of the normalized ion chamber rate as a function of time. The plots are ordered chronologically on the film, and correlative solar radio bursts and SID are indicated.

OGO 3 — 1966 49A

Apogee	122,220 km	Period	48.5 hr
Perigee	295 km	Inclination	31°

Solar Radio Burst Experiment — University of Michigan

Investigator:
F. Haddock

OGO 3, the third Orbiting Geophysical Observatory launched, was designed to make simultaneous correlated geophysical measurements. OGO 3 was launched on June 7, 1966. On June 23, 1966, the attitude control system inverter failed, and the spacecraft was commanded into a permanent spin mode.

The solar radio burst experiment consisted of a sweep-frequency receiver which measured radio noise of flux densities between 2.3×10^{-9} and 1.06×10^{-15} watts meter^{-2} hertz^{-1}. The observed bursts were all attributed to solar origin. A malfunction in the sweeping trigger pulse occurring 45 days after launch caused an intermittent change from a 4 to 2 MHz sweep once every 2 sec to a 4 to 3 MHz sweep every second. By October 10, 1966, the experiment operated in the 1-sec sweep mode only.

Data Set 66-049A-18A: The data consist of two tables of radio bursts observed in the frequency band 4 to 2 MHz. These lists appear as appendixes to a thesis and may be considered analyzed data. The lists were drawn from the period June 13, 1966, through September 30, 1967. The temporal coverage for this period was about 91 percent.

Data include:

1. ID number of burst
2. Date
3. Start time (UT)
4. 4-2 MHz importance

5. Associated flare importance
6. Associated plage region
7. Drift rate
8. Duration
9. Maximum flux density
10. Integral flux

Ionization Chamber Experiment – University of Minnesota

Investigator:
J. R. Winckler

The instrument was an ionization chamber sensitive to electrons >0.6 Mev and protons >12 Mev. The chamber also responded to nonpenetrating electrons ($E < 0.6$ Mev) through the bremsstrahlung they produced in the chamber wall and to X rays having energies greater than 10 kev. The response to 40-kev electrons (through bremsstrahlung) was about 10^{-7} times the response for electrons >0.6 Mev. The experiment was still operating normally as of June 1969.

Data Set 66-049A-23D: The data consist of an atlas of 10-50 kev solar X-ray events as supplied by the experimenter. The data cover the period June 25, 1966, to December 31, 1967.

Data include plots of the normalized ion chamber rate as a function of time. The plots, each illustrating one event, are ordered chronologically, and correlative solar radio bursts and SID are indicated. All of the available plots are on one roll of microfilm. The quality and percent coverage are unknown.

EXPLORER 33 – 1966 58A

Apogee	435,425 km	Period	30.9 hr
Perigee	15,900 km	Inclination	28.7°

GM Counter and Solid-State Detector – University of Iowa

Investigator:
J. A. Van Allen

Explorer 33 (AIMP-D) was a 207-lb spin-stabilized spacecraft instrumented for interplanetary studies at lunar distances of the interplanetary plasma and magnetic field. It was launched on July 1, 1966, into a high, elliptical orbit.

The GM counter and solid-state detector experiment was designed to measure energetic particles and solar X rays in interplanetary space at lunar distances. Three EON 6213 Geiger tubes measured solar X rays between 2 and 12 A, solar and galactic electrons of energies $\geqslant$40 kev, and solar and galactic protons of energies $\geqslant$0.5 Mev. The solid-state detector measured electrons, $E \geqslant 40$ kev, protons, $0.31 \leqslant E \leqslant 16$ Mev and alpha particles $0.59 \leqslant E \leqslant 229$ Mev. The data were accumulated over a 25-sec period, which repeated every 82 or 164 sec.

The experiment functioned normally until an electronic failure occurred in the solid-state detector starting about September 15, 1966.

Data Set 66-058A-05A: Data set A presents the Explorer 33 soft X-ray data in a machine-sensible form. The data are on one reel of 7-track, 556-bpi, BCD magnetic tape that covers the period from July 2, 1966, to July 26, 1967.

Data include:

1. Year
2. Decimal day
3. Flux (in milliergs per cm^2 per sec^{-1})
4. Internal sequence number
5. Geometric obliquity factor

Data Set 66-058A-05B: Data set B consists of plots on one roll of 35-mm film of the X-ray flux in the 2- to 12-A range. These are first-generation reduced data as received from the experimenter. The coverage, if every break in the data stream larger than 5 min is counted, is 55%. The 2- to 12-A flux, in milliergs per cm^2 sec^{-1}, is plotted as a function of universal time. Each plot covers 12 hr. Data are available for the period July 2, 1966, to July 26, 1967.

Data Set 66-058A-05C: Data set C consists of two rolls of 35-mm microfilm which contain data printed out with time in the form of date, hour, minute, and second rather than decimal day. The data are a reformatted printout of data set A.

Data include:

1. Year, month, day, hour, minute, and second of center of observing period
2. Flux (in milliergs per cm^2 sec^{-1})
3. Internal sequence number
4. Geometric obliquity factor

EXPLORER 35 – 1967 70A

Apolune	7717 km	Period	11.5 hr
Perilune	773 km	Inclination	149.6°

GM Counter and Solid-State Detector – University of Iowa

Investigator:
J. A. Van Allen

Explorer 35 (AIMP-E) was a 229-lb spin-stabilized spacecraft instrumented for interplanetary studies at lunar distances of the interplanetary plasma and magnetic field. It was launched on July 19, 1967, into an elliptical lunar orbit.

The experiment measured energetic particles and solar X rays in interplanetary space at lunar distances. Three EON 6213 Geiger tubes and a solid-state detector were used. The Geiger tubes measured solar X rays between 2 and 12 A, solar and galactic electrons of energies $\geq$40 kev, and solar and galactic protons of energies $>$ 0.5 Mev. The solid-state detector measured electrons, $E \geq 40$ kev, protons $0.31 \leq E \leq 16$ Mev, and alpha particles $0.59 \leq E \leq 229$ Mev. The experiment is identical to one flown on Explorer 33. The data were accumulated over a 25-sec period which repeated every 82 or 164 sec.

Data Set 67-070A-01A: Data set A consists of plots on one roll of 35-mm film of the X-ray flux in the 2- to 12-A range. These are first-generation reduced data as received from the experimenter. If every break in the data stream is counted, the coverage is 75 percent. The 2- to 12-A flux, in milliergs per cm^2 sec^{-1}, is plotted as a function of universal time. Each plot covers 12 hr. The data currently available are from July 26, 1967, to September 18, 1968.

Data include:

1. Year
2. Decimal day
3. Flux (in milliergs per cm^2 sec^{-1})
4. Internal sequence number
5. Geometric obliquity factor

Data Set 67-070A-01B: Data set B presents the Explorer 35 soft X-ray data. The data are on two reels of magnetic tape that cover the period from July 26, 1967, to September 18, 1968.

Data Set 67-070A-01C: Data set C consists of four rolls of 35-mm microfilm which contain data printed out with time in the form of date, hour, minute, and second rather than decimal day. The data are a reformatted printout of data set B.

Data include:

1. Year, month, day, hour, minute, and second of observation
2. Flux (in milliergs per cm^2 sec^{-1})
3. Internal sequence number
4. Geometric obliquity factor

DATA RECEIVED AND IN PROCESSING

The Data Center makes every effort to ensure that all data on hand are fully documented and in a form that can be utilized. In certain cases, the data or documentation from experiments listed here are incomplete, or distribution of the data may have been delayed at the request of the experimenter.

This section contains a listing of data received by NSSDC but not yet ready for distribution. The list was compiled on September 1, 1969. The experiments are arranged according to satellite launch date within major discipline areas. Data from these experiments may be available before the publication of the next *Catalog*. However, a requester should inquire about the status of the data before sending a formal request. In the inquiry, please include the NSSDC experiment ID number as given in the listing under Experiment.

Satellite	Experiment	Investigator	Affiliation
Fields and Particles			
Explorer 12 1961 Upsilon 1	Cosmic-Ray Detectors (61-020A-04)	F. B. McDonald	GSFC
Explorer 12 1961 Upsilon 1	Ion-Electron Detector (61-020A-05)	L. R. Davis	GSFC
Mariner 2 1962 Alpha Rho 1	Three-Axis Fluxgate Magnetometer (62-041A-03)	J. Mihalov	ARC
Explorer 14 1962 Beta Gamma 1	Fluxgate Magnetometer (62-051A-02)	L. Cahill	MINN
Explorer 14 1962 Beta Gamma 1	Cosmic-Ray Detectors (62-051A-04)	F. B. McDonald	GSFC
Explorer 14 1962 Beta Gamma 1	Ion-Electron Detector (62-051A-05)	L. R. Davis	GSFC
Explorer 18 1963 46A	Cosmic-Ray (E vs DE/DX) (63-046A-04)	F. B. McDonald	GSFC

Satellite	Experiment	Investigator	Affiliation
Explorer 18 1963 46A	Solar Wind Faraday Cup Detector (63-046A-07)	H. S. Bridge	MIT
P11-AS 1964 45B	VLF Electric Fields (64-045B-06)	F. L. Scarf	TRW
OGO 1 1964 54A	Solar Cosmic Rays (64-054A-12)	K. A. Anderson	CALB
OGO 1 1964 54A	Cosmic-Ray Spectra and Fluxes (64-054A-18)	J. A. Simpson	U. of Chicago
OGO 1 1964 54A	Ionization Chamber (64-054A-20)	J. R. Winckler	MINN
OGO 1 1964 54A	Electron Spectrometer (64-054A-21)	J. R. Winckler	MINN
Explorer 21 1964 60A	Retarding Potential Analyzer (64-060A-01)	G. P. Serbu	GSFC
Explorer 21 1964 60A	Cosmic-Ray Protons (64-060A-03)	J. A. Simpson	U. of Chicago
Explorer 21 1964 60A	Total Ionization Chamber (64-060A-05)	K. A. Anderson	CALB
Mariner 4 1964 77A	Cosmic-Ray Telescope (64-077A-04)	J. A. Simpson	U. of Chicago
1964 83C*	Rubidium Vapor Magnetometer (64-083C-01)	A. J. Zmuda	APL
Explorer 26 1964 86A	Solid-State Charged Particle Detector (64-086A-01)	W. L. Brown	BTL

*Identified by international designation only.

Satellite	Experiment	Investigator	Affiliation
Explorer 26 1964 86A	Ion-Electron Detector (64-086A-04)	L. R. Davis	GSFC
Explorer 28 1965 42A	Retarding Potential Analyzer (65-042A-01)	G. P. Serbu	GSFC
Explorer 28 1965 42A	Cosmic-Ray Protons (65-042A-03)	J. A. Simpson	U. of Chicago
OGO 2 1965 81A	Rubidium Vapor Magnetometer (65-081A-05)	J. C. Cain	GSFC
OGO 2 1965 81A	Energetic Particle Survey (65-081A-07)	J. A. Simpson	U. of Chicago
Pioneer 6 1965 105A	Cosmic-Ray Telescope (65-105A-03)	J. A. Simpson	U. of Chicago
OGO 3 1966 49A	Solar Cosmic Rays (66-049A-01)	K. A. Anderson	CALB
OGO 3 1966 49A	Cosmic-Ray Spectra and Fluxes (66-049A-03)	J. A. Simpson	U. of Chicago
OGO 3 1966 49A	Electron Spectrometer (66-049A-22)	J. R. Winckler	MINN
OGO 3 1966 49A	Ionization Chamber (66-049A-23)	J. R. Winckler	MINN
Explorer 33 1966 58A	Three-Axis Fluxgate Magnetometer (66-058A-03)	C. P. Sonett	ARC
Pioneer 7 1966 75A	Cosmic-Ray Telescope (66-075A-06)	J. A. Simpson	U. of Chicago

Satellite	Experiment	Investigator	Affiliation
ATS 1 1966 110A	Solid-StateParticle Detectors (66-110A-03)	G. A. Paulikas	Aerospace Corp.
ATS 2 1967 31A	Solid-State Particle Detectors (67-031A-05)	R. W. Fillius	UCSD
OGO 4 1967 73A	Energetic Particle Survey (67-073A-08)	J. A. Simpson	U. of Chicago
Ionospheric Physics and Planetary Atmospheres			
Discoverer 34 1961 Alpha Epsilon 1	Impedance Probe (61-029A-02)	J. Ulwick	AFCRL
1962 Lambda 1*	Impedance Probe (62-011A-03)	J. Ulwick	AFCRL
1962 Phi 1*	Impedance Probe (62-021A-05)	J. Ulwick	AFCRL
1962 Alpha Beta 1*	Impedance Probe (62-026A-01)	J. Ulwick	AFCRL
1962 Alpha Gamma 1*	Impedance Probe (62-027A-06)	J. Ulwick	AFCRL
ERS 2 1962 Alpha Chi 1	Impedance Probe (62-046A-02)	J. Ulwick	AFCRL
STARAD 1962 Beta Kappa 1	Impedance Probe (62-058A-02)	J. Ulwick	AFCRL
OGO 1 1964 54A	VLF Receiver (64-054A-08)	R. A. Helliwell	Stanford U.
OGO 2 1965 81A	VLF Receiver (65-081A-02)	R. A. Helliwell	Stanford U.
Pioneer 6 1965 105A	Two-Frequency Radio Receiver (65-105A-04)	V. R. Eshelman	Stanford U.

*Identified by international designation only.

Satellite	Experiment	Investigator	Affiliation
Pioneer 7 1966 75A	Two-Frequency Radio Receiver (66-075A-04)	V. R. Eshelman	Stanford U.
Ariel 3 1967 42A	Langmuir Probe (67-042A-01)	J. Sayers	Birmingham U.
Ariel 3 1967 42A	HF Thunderstorm Noise (67-042A-04)	F. Horner	RSRS
Ariel 3 1967 42A	VLF Receiver (67-042A-05)	T. R. Kaiser	U. of Sheffield
Mariner 5 1967 60A	Two-Frequency Radio Receiver (67-060A-02)	V. R. Eshelman	Stanford U.
Pioneer 8 1967 123A	Two-Frequency Radio Receiver (67-123A-03)	V. R. Eshelman	Stanford U.
Pioneer 9 1968 100A	Two-Frequency Radio Receiver (68-100A-03)	V. R. Eshelman	Stanford U.
Interplanetary Dust Particles, Lunar and Planetary Studies			
Gemini 5 1965 68A	Zodiacal Light Photography (65-068A-01)	J. Ney	MINN
Pioneer 6 1965 105A	Celestial Mechanics (65-105A-07)	J. Anderson	JPL
Gemini 9 1966 47A	Zodiacal Light Photography (66-047A-01)	J. Ney	MINN
Gemini 10 1966 66A	Zodiacal Light Photography (66-066A-01)	J. Ney	MINN
Mariner 5 1967 60A	Celestial Mechanics (67-060A-07)	J. Anderson	JPL
Apollo 10 1969 43A	Lunar Photography (69-043A-01)	Mapping Sciences Laboratory	MSC

Satellite	Experiment	Investigator	Affiliation
Apollo 11 1969 59A	Lunar Photography (69-059A-01)	Mapping Sciences Laboratory	MSC
Solar Physics and Astrophysics			
OGO 3 1966 49A	4-2 MHz Solar Burst (66-049A-18)	F. Haddock	MICH
OSO 3 1967 20A	Celestial Gamma-Ray Detector (67-020A-01)	G. Clark	MIT
OSO 3 1967 20A	Solar X-Ray Detector (67-020A-06)	R. G. Teske	MICH
OSO 3 1967 20A	Solar X-Ray Scintillation Telescope (67-020A-07)	L. Peterson	UCSD
OSO 4 1967 100A	Solar X-Ray Telescope (67-100A-02)	R. Giacconi	ASE

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NSSDC DATA REQUEST FORM

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DATA REQUESTED

SPACECRAFT NAME(S)

EXPERIMENT NAME(S)

NSSDC DATA SET IDENTIFICATION NUMBER(S)

FORM OF DATA (SEE INDIVIDUAL EXPERIMENT DESCRIPTION FOR FORMS OF DATA AVAILABLE)

TIMESPAN OF DATA

ADDITIONAL SPECIFICATIONS

INTENDED USE OF DATA (GIVE BRIEF STATEMENT)

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